REPORT ON
AN INDUCED POLARIZATION SURVEY
HORSEFLY LAKE AREA, BRITISH COLUMBIA
ON BEHALF OF
GREEN EAGLE MINES LIMITED

93A/7W

by

Peter J. Fominoff, B.A.Sc.

and

J. R. Poloni, B.Sc., P.Eng.

December 10, 1971

CLAIMS:

Name

JAMIE 4, 71-1, 71-3

LOCATION:

About 55 miles northeast of Williams Lake, B. C.
North of Suey Bay on Horsefly Lake, B. C.
Cariboo Mining Division
120° 52° SW

DATES:

November 17 to November 22, 1971

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SUMMARY

Induced polarization surveying on the present property has revealed that nearly all of the area covered is underlain by high chargeability material containing as much as 6 percent by volume of metallically conducting content. The present results indicate that this material extends from near surface to a depth of at least 300 feet.

An extension of the induced polarization survey to delimit the area of increased chargeabilities and three drill holes totalling a minimum of 1100 feet have been recommended to further investigate the area. The drill locations have been based upon a correlation of the results of the present induced polarization survey and the results of a copper geochemical survey.

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INTRODUCTION

During the period from November 17 to November 22, 1971, an induced polarization survey was executed in the Horsefly Lake area, British Columbia on behalf of Green Eagle Mines Limited. The field work was directed by Mr. Christian Zogg, an experienced geophysical operator on the staff of Seigel Associates Limited, working under the supervision of the writer.

As shown on Plate 2, the property lies in the Suey Bay area of Horsefly Lake about 55 miles northeast of Williams Lake. Access for this survey was by boat from the western end of Horsefly Lake. The topography of the survey area consists of low hills.

The claims covered, in whole or part, by the present survey are listed on the cover page of this report and are shown on Plate 2 on a scale of 1 inch = 2000 feet. These claims are held by Green Eagle Mines Limited.

Scintrex Mk VII time domain (pulse-type) induced polarization equipment has been employed on this property. The transmitting unit had a rating of 2.5 kilowatts and equal on and off times of 2.0 seconds. The receiving unit was a remote, ground-pulse type triggered by the rising and falling primary voltages set up in the ground by the transmitter. The integration of the transient polarization voltages takes place for 0.65 seconds after a 0.45 second delay time following the termination of the current-on pulse.

The purpose of an induced polarization survey is to map the

subsurface distribution of metallically conducting mineralization which, on the present property, could include pyrite, chalcopyrite and other metallic sulphide minerals. As well, metallic conductors such as graphite can give responses not always distinguishable from sulphide mineralization.

The three electrode array was employed for the survey. For this electrode array, one current electrode and two potential electrodes traverse the lines with an interelectrode spacing called "a". The second or "infinite" current electrode is placed a distance greater than 5a from the measuring point which is defined as the midpoint between the moving current electrode and the near potential electrode. For this reconnaissance survey observations were taken for a= 200 feet and a = 400 feet with 200 foot station intervals.

For the present survey a grid was laid out consisting of four lines about 2700 feet long running in a northeasterly-southwesterly direction. The induced polarization survey totalled about 2 line miles.

GEOLOGY

The geology of the area including and surrounding the present property has been studied by G. Lorinczi of Chapman, Wood and Griswold Limited and is the subject of his report published on September 1, 1967. The geology of the property may be summarized as follows:

"The rocks consist chiefly of Triassic and/or Jurassic sediments and volcanics intruded by stocks, sills and dykes of intermediate to basic composition of Jurassic and/or Cretaceous Age. Copper mineralization invariably occurs in or near these intrusive tongues both as dissemination and as fracture filling. Chalcopyrite, the dominant copper mineral in the

Horsefly area, is always closely associated with pyrrhotite. Other metals of interest in the area are gold, silver and mercury. A diamond drill hole collared about 1200 feet northeast of the present survey grid along Line 24 has revealed the presence of a graphitic argillite layer intruded by chloritized quartz diorite. A diamond drill hole collared at about 12 + 50 W about 100 feet north of Line 24 has revealed the presence of fairly consistant but sub-economic copper mineralization."

A geochemical survey has revealed the presence of anomalous concentrations of copper on all four lines surveyed. The purpose of the present induced polarization survey has been to extend previous investigation of the property and to investigate the source of the geochemical copper anomalies which have not yet been investigated by induced polarization.

DISCUSSION OF RESULTS

Plate 2, on the scale of 1 inch = 200 feet shows the geophysical results in profile form. The vertical scale for the chargeability profiles is 1 inch = 20.0 milliseconds. The vertical scale for the resistivity profiles is 2 inches = 1 logarithmic cycle with line trace taken as 100 ohm-meters. Different symbols explained in the legend have been used to indicate the observations taken with the two electrode spacings. A grid and claim locations map is also included on Plate 2, on the scale of 1 inch = 2000 feet.

The chargeability results over the whole of the grid area range from about 15.0 milliseconds to 60.0 milliseconds. There is a slight decrease on the eastern ends of Lines 16 N and 20 N however the values do not fall below 15.0 milliseconds. Wide spread chargeabilities in the 20.0

to 60.0 millisecond range are expected to arise from a uniform subsurface distribution of between 2 and 6 percent by volume of metallically conducting minerals such as sulphides or graphites or alternatively by greater quantities of non-metallic minerals such as chlorite or kaolinite which are known to give rise to increases chargeability responses. The source of the increased chargeability responses is interpreted to extend to more than 300 feet below ground surface.

The resistivities are seen to range from a minimum of 10 ohm-meters to a maximum of about 1000 ohm-meters. There is a sharp resistivity contact on all four lines located at about 20 W on each line. The resistivity contact may be due to a geological contact occurring in the same area with possibly more competent and highly resistive intrusive rocks occurring to the west and less resistive sedimentary rocks occurring to the east. In general the resistivities obtained with the wider electrode spacings are lower indicating that the resistivity decreases are due to bedrock characteristics and not to increasing overburden thickness.

The low resistivities observed east of station 20 W on all lines made it impossible to obtain chargeability readings at some stations. These stations are noted "NR" for no reading. There is no definite correlation between the resistivity and chargeability responses.

CONCLUSIONS AND RECOMMENDATIONS

The present induced polarization survey has shown that high chargeability material containing about 2 to 6 percent by volume of metallically conducting material may be expected to extend from near surface down to at least 300 feet. Since most of the grid is seen to be underlain by high chargeability material it is recommended that the survey be extended to delimit the area of increased chargeability responses. It is

difficult to precisely locate exploratory drill holes when the area of chargeability increases is extensive. However, the following three drill holes have been recommended in a letter to Green Eagle Mines Limited dated November 25, 1971. The drill holes have been recommended on the basis of increased chargeability responses correlated with increased copper values located by a geochemical survey:

COLLAR	DIP	DIRECTION	MINIMUM DEPTH
L 16 N; 30 W	-45°	Southwest along the line	350 feet
L 20 N; 24 W	-45°	Southwest along the line	350 feet
L 24 N; 24 W	-45°	Northeast along the line	400 feet

The drill holes listed are not in any order of preference. Geological field investigations and local topographical conditions may suggest an order of priorities in executing the drilling programme. The results of the drilling should be correlated with the present induced polarization survey results to aid in a more meaningful interpretation of the data.

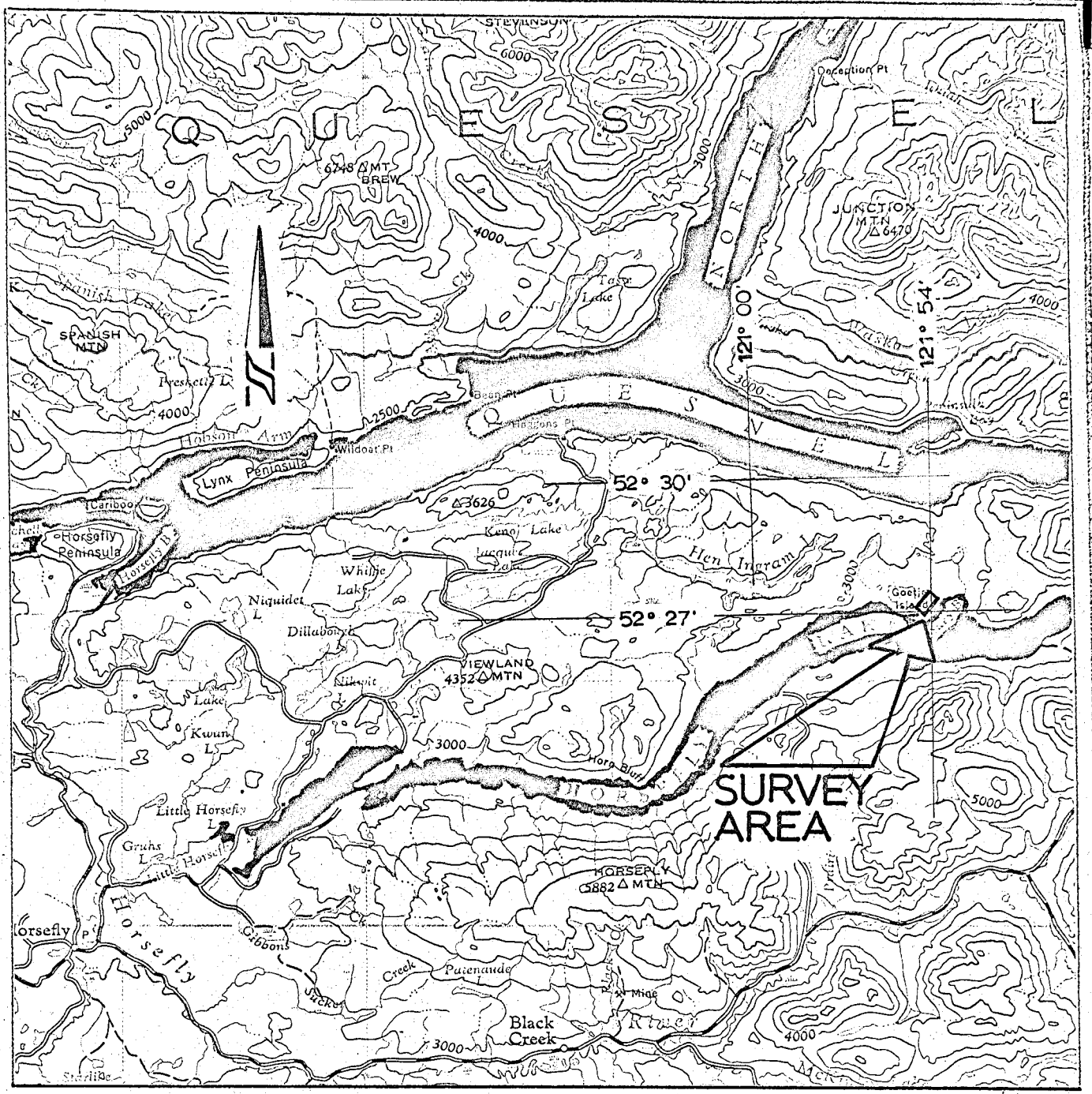
Respectfully submitted,

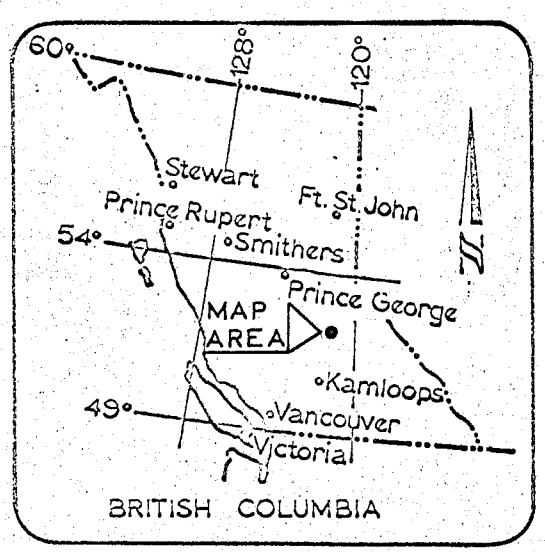
SEIGEL ASSOCIATES LIMITED

Peter J. Fominoff, B.A.Sc.
Geophysicist

J. R. Poloni, B.Sc., P.Eng.

Vancouver, B. C.
December 10, 1971





GREEN EAGLE MINE LTD.

LOCATION MAP

HORSEFLY LAKE AREA · BRITISH COLUMBIA

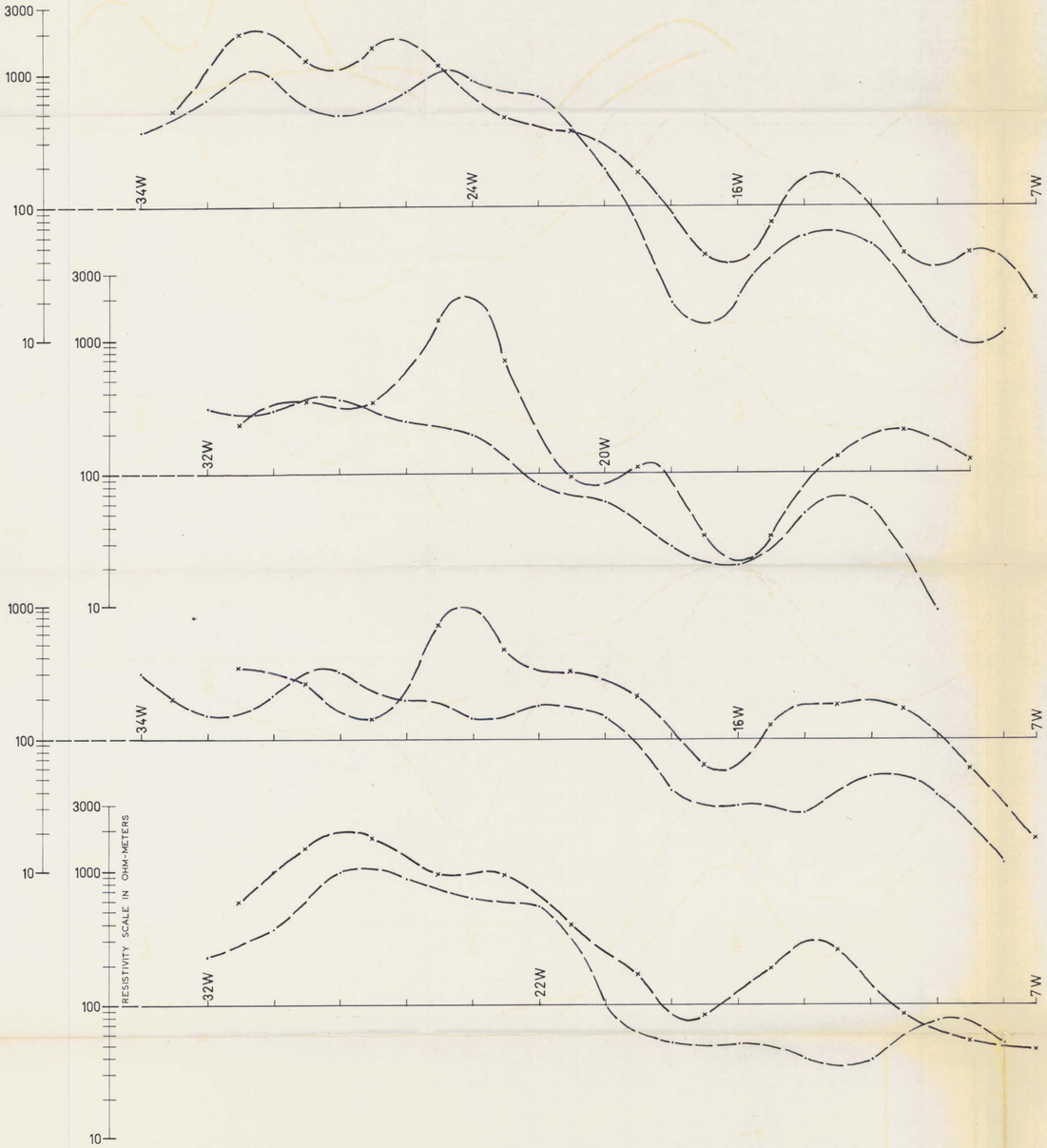
SCALE 1 : 250,000

4 miles 0 4 miles

Survey by
SEIGEL ASSOCIATES LIMITED
NOVEMBER 1971

PLATE 1

RESISTIVITY



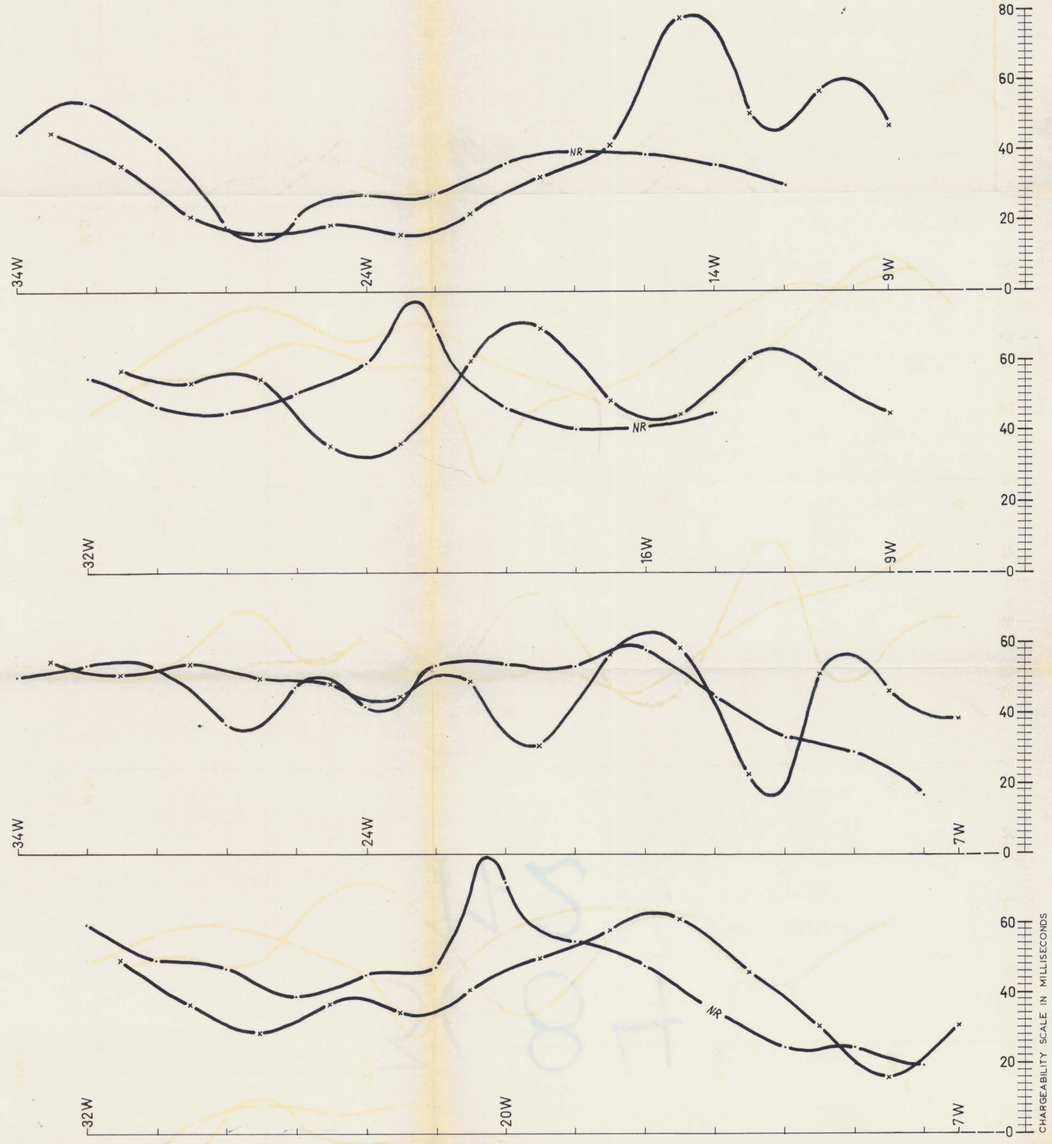
L 28 N

L 24 N

L 20 N

L 16 N

CHARGEABILITY



LEGEND

CHARGEABILITY SCALE: 1 inch = 20 MILLISECONDS

ELECTRODE SPACING: a = 400' —•—•—

a = 200' —×—×—

RESISTIVITY SCALE: 2 inches = 1 LOGARITHMIC CYCLE WITH LINETRACE TAKEN AS 100 OHM-METERS

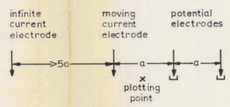
ELECTRODE SPACING: a = 400' —·—·—

a = 200' —×—×—

NOTES

SCINTREX MK VII INDUCED POLARIZATION INSTRUMENTATION

THREE ELECTRODE ARRAY

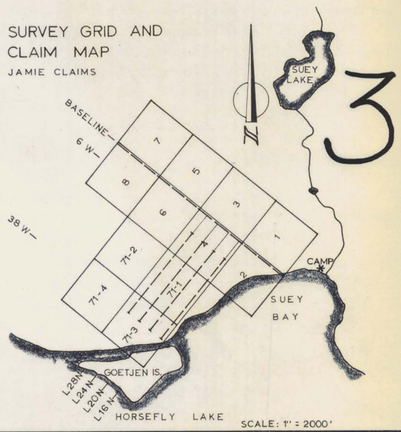


INTERLINE SPACING NOT TO SCALE

TO ACCOMPANY A GEOPHYSICAL REPORT BY P.J. FOMINOFF AND J.R. PALONI DATED DECEMBER 10, 1971

SURVEY GRID AND CLAIM MAP

JAMIE CLAIMS



SCALE: 1" = 2000'

3684

M-2

PLATE 2

GREEN EAGLE MINES LIMITED

HORSEFLY AREA BRITISH COLUMBIA

INDUCED POLARIZATION SURVEY

CHARGEABILITY AND RESISTIVITY PROFILES

SCALE 1 inch = 200 feet

200 feet 0 200 feet

SURVEY BY SEIGEL ASSOCIATES LIMITED NOVEMBER 1971